

12 [0001] The present invention relates to a system including a portable identification medium, for example in the form of a card, and a control unit with which information which is encoded on the identification medium can be read, the control unit allowing a user to access the system once the identity of the identification medium has been established.

Please amend paragraph [0003] as follows:

[0003] In these systems, it is a disadvantage that not only the medium must be equipped with a magnetic strip or a chip, which requires a comparatively large expenditure of effort and money but, above all, that the control unit must be provided with a device for reading out the information, involving a corresponding degree of expenditure. Thus, the control unit must have, in particular, an intake for the medium. This intake, for example, a slot having an appropriate mechanism, requires considerable outlay and is susceptible to vandalism.

13 < Please amend paragraph [0004] as follows: >

[0004] Known are, moreover, such systems in which the code is transmitted acoustically with the assistance of an electronic tone generator located on the medium. In these systems, the medium requires a large expenditure of effort and money because of the generator. Besides, the transmission is very unreliable and frequently gives rise to system errors. Moreover, devices in the form of cards are known which have a toothed profile on one edge, the information being encoded in the arrangement of the teeth. The acoustic signal is generated by sweeping an object over the profile, a noise developing in the process. In this context, it is a disadvantage that, in addition to the medium, a further object must exist which is used to generate the signal. Due to the additionally required object, the system is complex and unpractical. Besides, the signal is reproducible only with difficulty since it depends on the speed and completeness of the sweeping movement.

Before paragraph [0006], please insert the heading --SUMMARY OF THE INVENTION--.

Please amend paragraph [0006] as follows:

14 [0006] Therefore, an object of the present invention is to provide an access-controlled system which is rugged, easy to handle and inexpensive to manufacture while being highly reliably and reproducible. It is also an object of the present invention to provide an identification

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medium which supports the system according to the present invention and at the same time is reliable, rugged and inexpensive.

After paragraph [0006], please insert paragraph [0006.1] as follows:

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--[0006.1] The present invention provides an access-controlled system. The access-controlled system includes a portable identification device including an element configured for generating a reproducible acoustic signal in a mechanical manner, a frequency spectrum of the signal encoding an information. Also included is a control unit configured for reading the encoded information and for allowing a user to access the access-controlled system upon an establishing of an identity of the identification device.--.

Please delete paragraph [0007].

Please amend paragraph [0008] as follows:

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[0008] According to the present invention an acoustic signal-generating device is attached to the identification medium which, after a mechanically applied force has acted thereon, for example, subsequent to a pressing by the user, emits an acoustic signal by which the medium can be identified. To enable a reliable identification, it is required for the acoustic signal, whose frequency spectrum encodes information, to be reproducible. A generated signal must correspond to each further generated signal as exactly as possible.

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Please amend paragraph [0009] as follows: >

[0009] It is conceivable for such a system to be used in many areas. Thus, it is possible for telephone cards or credit cards to be provided with the device according to the present invention. In the case of a telephone card, the acoustic signal would be picked up via a microphone of the telephone system, for example, through the handset, and sent to a central computer via the telephone line. The central computer would then carry out the billing of the telephone call, the billing being allocated to the owner of the card via the acoustic signal. In the case of a credit card, it would be possible for the customer or account number of the card holder to be encoded in the signal. In this context, however, it is advantageous if the user authorizes himself/herself by entering a PIN code which is only known to him/her into the control unit.

Please amend paragraph [0011] as follows:

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[0011] In principle, strings, rods, tongues, membranes, plates or air columns can be used as signal-generating device. However, it is particularly simple and, therefore, advantageous, if the

signal-generating device features a tongue and/or a curved surface which is attached onto the medium in such a manner that it/they can be acted upon by a user pressing with a finger against a resistance, and that it/they emit(s) the signal ("clack") when the resistance is overcome. Devices of that kind are known as toys (frog clickers). After the clacking threshold is overcome, the [means] device springs back to the initial position. In this context, the mostly different noise ("click") emitted while springing back can also be used for encoding information.

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cont.
Please amend paragraph [0012] as follows: 7

[0012] In this context, in an embodiment, the encoding of the information is effected by the individual shaping of the tongue or surface and/or by the design of their suspension, i.e., for example, by changing the resistance to be overcome. Extensive tests have shown that such a device can generate an individual signal from whose frequency spectrum the coded information can be reliably read, advantageously after a Fourier transformation. In the course of time, the characteristic does not or only slightly change, it being possible for such a change to be allowed for via the computational algorithms. It is also conceivable for the information to be encoded by individually shaping the resonator, the individualization having to be effected by more significant measures in this case.

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Please amend paragraph [0014] as follows:

[0014] In an embodiment, the tongue or curved surface are integrally formed on the identification medium which is designed as a card. To produce a resistance, it is advantageous for the tongue to be provided with a longitudinal groove or with walls which project perpendicularly to the top surface of the card. A "clacking" effect can also be attained via a peripheral clamping on both sides. The integral formation provides a good coupling of the device to the resonator and, in this manner, a correspondingly good sound amplification.

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Please amend paragraph [0016] as follows:

[0016] In an embodiment, the medium is designed as a key tag, thus being handy at any time and relatively unlosable. Moreover, it can be advantageous to provide the medium, in particular the card, with a magnetic strip and/or with a chip or to provide known cards with a device according to the present invention for generating an acoustic signal. In this context, the acoustic signal can be used for a redundant individualization so that security is further increased.

Before paragraph [0017], please insert the heading --BRIEF DESCRIPTION OF THE DRAWINGS--.

Please amend paragraph [0018] as follows:

[0018] Figure 1 shows a control unit and a hand with an identification medium in the form of a card;

Figure 2 shows a card in a top view (a) and in an elevation (b);

Figures 3a)-3e) show the tongue of a card with different shapes; and

Figure 4 shows a tongue clamped on both sides.

Before paragraph [0019], please insert the heading --DETAILED DESCRIPTION--.

《 Please amend paragraph [0019] as follows: 》

[0019] Figure 1 shows a control unit 20 and an identification medium in the form of a card 1 in the known cheque card size which is held in hand 2 of a user of the system. On card 1, individual information is encoded in the acoustic signal which is emitted by a curved surface 4 formed in card surface 3 when the curved surface is pressed in by the pressing of thumb 5 against a resistance. The information is encoded in the frequency spectrum of the noise ("click-clack").

《 Please amend paragraph [0020] as follows: 》

[0020] Card 1 is manufactured in known manner from plastic (PE) and serves as a resonator. Provided in the card is an opening 6 which is covered by a tongue 7 in the case of the embodiment according to Figure 2. Tongue 7 is formed of metal and secured onto the card via weld points 8 in a manner that it is prestressed. Tongue 7 has a depression 9 which generates a tension, thus influencing the frequency spectrum of the acoustic signal. Card 1 according to Figure 2 has a cut-out 10 to which a key 11 can be attached.

《 Please amend paragraph [0021] as follows: 》

[0021] Figure 3 shows tongues which are differently shaped and, therefore, generate different noises. All tongues have a depression 9. Provided in the tongues according to Figures 3a) and 3b) are small bores 12 which give rise to a shift in the frequency spectrum. Bores 12 are placed at different locations of tongues 7 and, therefore, generate different frequencies. In tongues 7 of